

Title : Anaesthetic Considerations and Difficult Airway Management In a Case of Carcinoma of Tongue**Author :** *Dr. H. S. Rawat, **Dr. Snehal Rupanar, ***Dr. Roma Saraf

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Address for Correspondence : Department of Anaesthesiology and Critical Care, PDVVPF'S Medical College and Hospital, Ahmednagar.**Abstract-**

Carcinoma of tongue is one of the most common intraoral malignancy in India, owing to tobacco chewing habit of the population, leading to the development of restricted mouth opening and difficult airway due to submucosal fibrosis .We report a case of a 31 yrs old male, weighing 68 kgs who was diagnosed as a case of carcinoma of tongue and posted for elective hemiglossectomy with modified radical neck dissection. The patient was operated under general anaesthesia. The case report pertains to successful airway and anaesthesia management in background of difficult airway.

Key Words – Difficult airway, nasal intubation, awake fibreoptic intubation carcinoma of tongue

Introduction : Carcinoma of tongue is one of the most commonly occurring neoplasm among all intraoral malignant tumors, accounting for about 30% of all oral malignancy. Constant irritation by jagged or irregular teeth and tobacco usage, have been considered a very common etiology by many practitioners. While airway management in general, and for head and neck surgery, has undergone remarkable transformation and sophistication ,it is still the airway which demands special focus, because problems concerning airway, lead to some of the most frequent major morbidity and mortality in head and neck surgery .We present a case report of a recognized difficult airway in a non emergent setting.

Conventional rigid Macintosh laryngoscope is known to fail, in patients with mouth opening of less than 2.5mm^[1]. Nasal fibreoptic tracheal intubation (FOI) has been suggested as the technique of choice in these patients^[2].In absence of a fibreoptic bronchoscope, light wand availability, expertise in blind nasotracheal

intubation and reluctance to adopt retrograde intubation as an initial strategy ,we successfully intubated the patient nasally under Succinylcholine after confirming adequate bag and mask ventilation and assuming that mouth opening would improve after administering muscle relaxant.

The difficult airway is a clinical situation which include either one or altogether, the concepts of failed intubation , difficult intubation, difficult laryngoscopy and difficult mask ventilation. Failed intubation is inability to place endotracheal tube. Its incidence is 1.9% cases^[3]. Difficult intubation can be defined as, when the proper insertion of the endotracheal tube with conventional laryngoscopy, requires more than three attempts and /or more than 10 mins^[4]. Difficult laryngoscopy can be defined, when it is not possible to visualize any portion of vocal cords with conventional laryngoscopy. Difficult mask ventilation can be defined as, not possible for the unassisted anaesthesiologist, to maintain oxygen saturation more than 90% using 100% oxygen and positive pressure ventilation in a patient, whose oxygen saturation was more than 90% before anaesthetic intervention.

Case Report

31 yrs old male, weighing 68kgs, a known case of carcinoma of tongue, with mass lesion of 5x4 cms of left anterior 2/3rd of tongue crossing the midline, presented for elective hemiglossectomy with modified radical neck dissection of left side. He was a chronic tobacco chewer since past 10 yrs .Past medical and surgical history was insignificant. Physical examination was unremarkable except for restricted mouth opening of one finger breadth. After obtaining informed consent from patient, decision was made to proceed with nasal intubation with RAE tube. An 18G IV cannula was inserted into left forearm vein and patient was premedicated with Inj. Metoclopramide 10mg IV and Inj. Ranitidine 50 mg IV 30 mins before surgery. Inj. Midazolam 1.5mg IV was given for sedation, 15 mins prior to transporting patient into operating room.

Upon arrival into operating room, monitors for ECG, temperature, heart rate, oxygen saturation and NIBP were applied. Inj. Fentanyl 50mcg IV was given. The patient's oropharynx was sprayed with 4% lignocaine

spray through the narrow oral opening. 0.05% Oxymetazoline hydrochloride drops were instilled into both nostrils. Patient was pre-oxygenated for 3 mins with 100% oxygen. After confirming adequate ventilation with bag and mask, Inj. Thiopentone Sodium 275 mg IV was given in incremental doses till loss of eyelash reflex. Once again, confirming adequate ventilation, Inj. Succinylcholine 100mg IV was given. As per prior assumption, the mouth opening improved to two finger breadths and RAE tube 7.5 no. portex, cuffed, lubricated with 2% lignocaine jelly was inserted through right nostril, and guided into larynx by direct laryngoscopy with help of Magills forceps. The cuff was inflated with 15ml of air and its position confirmed by EtCo₂ tracing and chest auscultation. The throat was packed and endotracheal tube secured with cotton tape. General anaesthesia was maintained with Isoflurane 1%, N₂O 67%, O₂ 33%. Neuromuscular blockade was achieved with Inj. Vecuronium 0.08 mg/kg IV. Both eyes were lubricated and taped. Intraoperatively anaesthesia was maintained with incremental dose of Inj. Vecuronium 0.02mg/kg IV and Inj. Fentanyl 1mcg/kg IV.

Surgery went on uneventfully. At end of surgery, neuromuscular blockade was antagonized by Inj. Neostigmine 0.05mg/kg and Inj. Glycopyrrolate 0.01mg/kg IV. After meeting extubation criteria, patient was extubated. Patient was sent to post anaesthetic recovery room for observation. He made an uneventful postoperative recovery. The patient had no recall of operating room events. Postoperative analgesia was maintained with Inj Paracetamol 15mg/kg IV infusion 8 hrly and Inj. Diclofenac 1mg/kg IM SOS.

Discussion :

The frequency of inability to ventilate and intubate has been estimated at 0.01 to 2.0 per 10,000 anaesthetics^[5]. Techniques such as awake intubation, flexible fiberoptic intubation, retrograde intubation, transtracheal jet ventilation, cricothyrotomy, tracheostomy and lots of instruments such as endotracheal tube guide, lighted stylet, rigid/video laryngoscope, rigid fiberoptic laryngoscope have been designed to overcome problems of difficult airway and intubation. They are often too complicated, too costly or unavailable especially in poor parts of the world.

Difficult airway management can have tremendous impact on patient outcome as well as anaesthesia care team. The severity of outcome can be devastating such as pulmonary aspiration, airway injury, brain damage and even death. Fiberoptic intubation in awake state is recommended in such cases with difficult airway, but owing to lack of instruments in our setup, we proceeded with traditional method of endotracheal intubation assuming adequate mouth opening after Inj. Succinylcholine. We kept following options to achieve endotracheal intubation, if conventional methods failed:

- 1) Blind nasal intubation.
- 2) Retrograde intubation.
- 3) Tracheostomy.

Blind nasal intubation is associated with risk of airway trauma, laryngeal edema and bleeding which may make mask ventilation and fiberoptic laryngoscopy difficult. Awake fiberoptic intubation remains "gold standard" in such a situation.

Retrograde intubation is an accepted mode of establishing an airway in a situation of difficult endotracheal intubation^[6]. Retrograde intubation is a two stage procedure. The first stage includes retrograde passage of a catheter or a long guide wire from the larynx to the mouth or nose. Second stage consists of rail roading an ETT over the catheter or the guide wire. Complications of retrograde intubation include peritracheal hematoma, tracheal laceration, infection, subcutaneous emphysema, pneumothorax, pneumomediastinum, and trigeminal nerve trauma and mediastinitis. It is effective in case of failed intubation where bag mask ventilation is adequate and time is available.

Tracheostomy, an alternate technique preferred by some surgeons and anesthesiologists, is associated with complications like hemorrhage, subcutaneous emphysema, pneumomediastinum, pneumothorax, recurrent laryngeal nerve damage, stomal and respiratory tract infection, tracheal stenosis, tracheal erosion, dysphagia, problems with decanulation and excessive scarring^[7]

In conclusion, it can be said that moderate to severely restricted mouth opening, can pose challenges for an

anaesthesiologist .Meticulous planning and readiness to deal with difficult airway can help prevent a catastrophe. Preparedness for tracheostomy should always be present, especially in the absence of a fiberoptic bronchoscope, as surgical airway may be the only option left, especially in an emergent situation.

To summarise, we can conclude that for successful airway and anaesthesia management in a case of carcinoma of tongue, one should have thorough and deep knowledge of the anatomy of airway and should acquire basic airway skills to prevent any clinical disaster in operation theatre, especially for an elective surgery.

References :

- 1: Aiello G, Metcalf I .Anaesthetic implications of temporomandibular joint disease. Can.J.1992;39:610-6
- 2: Kulkarni DK , Prasad AD, Rao SM. Experience in fiberoptic nasal intubation for temporomandibular joint ankylosis. Ind J Anaesth 1999;43:26-9
- 3: Rose DK, Cohen MM. The airway problems and predictions in 18,500 patients. Can.J.1994;41:372
- 4: Glassenberg R. General anaesthesia and maternal mortality. Semin Perinatol 1991;15:386-96
- 5: Dhara SS.Retrograde intubation- A facilitated approach Br.J.Anaesth1992;69:631-3
- 6: Chew JY, Cantrell RW. Tracheostomy , complications and their management. Arch Otolaryngol 1972;96:538-45
- 7: Walker DG. Complications of tracheostomy; their prevention and treatment. J Oral Surg 1973;31:480-2